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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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08/833,410 04/04/97 BACHMAT

E 96-108

LM02/0707

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EXAMINER

LANGJAHN, D

ART UNIT

PAPER NUMBER

2752

DATE MAILED:

07/07/99

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

# Office Action Summary

Application No.

08/833410

Applicant(s)

Bachmat

Examiner

D. Langjahr

Group Art Unit

2752

☒ Responsive to communication(s) filed on 3-1-99

☐ This action is FINAL.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

## Disposition of Claims

☒ Claim(s) 1, 2, 17-24 is/are pending in the application.

Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

☐ Claim(s) \_\_\_\_\_ is/are allowed.

☒ Claim(s) 1, 2, 17, 18 is/are rejected.

☒ Claim(s) 19-24 is/are objected to.

☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.

☒ The specification is objected to by the Examiner.

☒ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been  
☐ received.

☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

☐ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

— SEE OFFICE ACTION ON THE FOLLOWING PAGES —

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*Response to Arguments*

1. The examiner notes that the title change and illegible oath signature were not addressed, apparently due to oversight, but the examiner approves of the specification amendments.

*Claim Rejections - 35 USC § 112*

2. Claim(s) 21 and 22 is/are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim(s) 21 recite(s) the limitation “the number of cache hits per packet” in line(s) 5. There is insufficient antecedent basis/bases for this/these limitation(s) in the claim(s).
3. Of the original claims 1-16, 3-16 were declared allowable in the first action. As of this amendment, 1-9, 13 and 15 has/have been amended and new claims 17-24 have been added. Independent claim 9 as amended remains allowable. Claims 1, 2 and 17-24 are presented for examination.

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4. Claim(s) 19-24 is/are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claim(s), subject to correction of the 112 rejections above.

5. In response to applicant's argument as to Milillo's teachings:

- blockage and allocation is taught at C 6 and following and the examiner agrees with the applicant so far as this is a summary of the more salient points of this invention;
- {claim 1} as to no suggestions in Milillo for generating a cache miss prediction value based on statistics including file information retrieval activity value and extent of activity, the examiner believes this is taught in Milillo at Column 14, Line 4, with the "window of inactivity" related to file activity by both correlation and causality;
- cache memory size value is taught at C 2, L 55 with the thresholds being adjusted to adjust the size of the "working data" within the cache.

6. In response to applicant's argument as to Shih's teachings:

- file activity is, after all, disclosed at C 4, L 6, which shows a direct connection between file activity (hits) and the observation intervals which feed the statistics calculations;
- cache memory size value is taught at Fig. 4, item 220. Following up in the text (C 6, L 49), assuming the cache stack is part of the cache, the cache size as far as the rest of the system is aware, is in fact reduced by reducing unnecessary updates.

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As to the applicant's arguments regarding claim 17, the examiner avers it is not allowable for the same reasons as claim 1; see modified 103 action below.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

7. Claim(s) 1, 2, 17 and 18 is/are rejected under 35 U.S.C. 103 as being unpatentable over Milillo in view of Shih.

Milillo et al., U.S. Patent 5566315 discloses **a system for generating an operational assessment of a cache memory in a digital data processing system for respective cache memory sizes and a cache miss prediction element (title) and a cache memory size adjustment element** taught as ...the size of the working set of data within the cache memory (C[olumn] 2,

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L[ine] 56), with the miss prediction connection to **file information retrieval activity** shown at (C 14, L 4) and **cache size** value nexus taught at (C 2, L 55).

However, Milillo does not particularly and explicitly disclose **operational statistics** and **generating the cache miss prediction value based on a particular one of a plurality of cache memory management methodologies**.

Searching the references in closest art, which is analogous art, Shih et al., U.S. Patent 5590308 is found to solve generally similar problems.

Shih discloses statistics and a methodology in the abstract for the desirable purpose of reducing computing overhead (C 3, L 26). This purpose goes beyond this current implementation, and wide-ranging implications for data processing.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to add the high-throughput features of Shih to the sophisticated prediction methods of Milillo because a lot of gains achieved by prediction circuitry can be undercut if the computing overhead is excessive, or even worse, the predictor themselves contribute to the bogging down of processing.

Additionally, this kind of “traffic anticipation” control system is becoming virtually the sine qua non of today’s immensely complex processors.

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for response to this final action is set to expire THREE MONTHS from the date of this action. In the event a first response is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event will the statutory period for response expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Langjahr whose telephone number is (703) 305-4034 (e-mail address: David.Langjahr@uspto.gov). The examiner can normally be reached Monday through Thursday from 7:00 AM to 5:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John W. Cabeca, can be reached on (703) 308-3116.

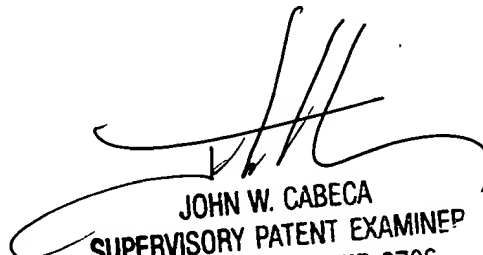
The fax phone number for this Group is (703) 308-5359. It is recommended that any faxes sent be followed by a voicemail message to (703) 305-4034 stating that a fax has been sent, and by whom. Also, please include a return phone number.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

*DCL*

DCL

June 21, 1999

  
JOHN W. CABECA  
SUPERVISORY PATENT EXAMINER  
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